Name:_____   Date:_____

Polynomial Operations PRACTICE (version 25)

1. Let polynomials $p(x)$ and $q(x)$ be defined below.

$$p(x) = 8x^5 + 9x^4 + x^3 + 2x - 3$$

$$q(x) = 9x^5 - 2x^3 - 3x^2 + 5x + 1$$

Express the sum of $p(x) + q(x)$ in standard form.

2. Let polynomials $a(x)$ and $b(x)$ be defined below.

$$a(x) = -2x^2 - 6x + 8$$

$$b(x) = -6x - 5$$

Express the product $a(x) \cdot b(x)$ in standard form.

3. Express $(x + 1)^6$ in standard (expanded) form.

Polynomial Operations PRACTICE (version 25)

4. Let polynomials $f(x)$ and $g(x)$ be defined below.

$$f(x) = 2x^3 + 16x^2 + 13x - 4$$
$$g(x) = x + 7$$

The quotient of $\frac{f(x)}{g(x)}$ can be expressed as a polynomial, $h(x)$, and a remainder, R (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x+7}$$

By using synthetic division or long division, express $h(x)$ in standard form, and find the remainder R.

5. Let polynomial $f(x)$ still be defined as $f(x) = 2x^3 + 16x^2 + 13x - 4$. Evaluate $f(-7)$.